

# Spot them in the Air !



3<sup>d</sup>

PUBLISHED BY THE  
**DAILY MIRROR**

3<sup>d</sup>



# *Spot them in the Air!*

Identification drawings and descriptions  
of twenty-seven British and German  
aircraft



PUBLISHED BY THE DAILY MIRROR  
GERALDINE HOUSE, ROLLS BUILDINGS, FETTER LANE, LONDON, E.C.4

# **Foreword**

*by the "Daily Mirror" Aviation Correspondent*

**O**N a certain bright autumn morning an airship appeared over a large West Country town, flying at an altitude of only a few hundred feet. At that time the Zeppelin terror haunted our nights, and the town was crowded with self-evacuated families from London and the East Coast. The ensuing panic, fainting women and screaming children, can be better imagined than described.

The fact that the "Zeppelin" overhead was only a tiny submarine-chasing "blimp" of the coastal-patrol type, with a friendly, hand-waving crew hanging in its rigging, made no difference at all, because the few people who identified it correctly were quite unable to calm the fears of those who fully expected to be blown to atoms at any moment.

Now, twenty-two years later, we have another war on our hands and enemy aircraft have already been seen in these islands, both in the air and on the ground—in bits. In some parts of the country there is considerable daily air activity, and in other places a passing aeroplane is an event even to-day. In both cases, however, a means of rapidly identifying any aircraft seen will save needless fear and anxiety, and in certain circumstances the

ability of civilians to distinguish enemy types may be of the utmost value to our defence and intelligence services.

With these objects in view, the *Daily Mirror* has produced this publication.

The contents of the following pages have been carefully compiled by a group of aviation experts, and no effort has been spared in an endeavour to provide accurate and reliable information, which, in the case of enemy machines, has been a difficult task. For instance, certain 'planes, such as our Whitley Bomber and the German Dornier "Flying Pencil," use alternative types of power—either in-line liquid cooled engines or air-cooled radial motors, each combination giving different performance and loading figures, not to mention external variations to cowlings and control surfaces necessitated by such changes.

Colouring of aircraft is another important means by which identification can be established; but when more or less overhead, all machines appear black against the sky. When seen at a distance, however, colours can sometimes be definitely picked out.

The dark earth and green camouflage is standard on the upper surfaces of all British aircraft to protect them from air observation while standing on aerodromes, but the colouring of under surfaces varies with different types of machines. Trainer 'planes are painted orange or yellow under the wings.

while all the under surfaces of heavy bombers are sprayed with a non-reflecting black paint known as "Night."

Single-seater fighters and twin-engine fighters are, in some cases, painted black on the under-side of one wing and white on the other wing. This confuses enemy gunners, and at certain angles creates the illusion of one large machine, instead of a flight of three fighters.

Civil air-liners, where they have not been camouflaged, can be identified by the big red, white and blue band which underlines the registration letters on the wings.

German machines are painted mostly in black, grey and shades of blue.

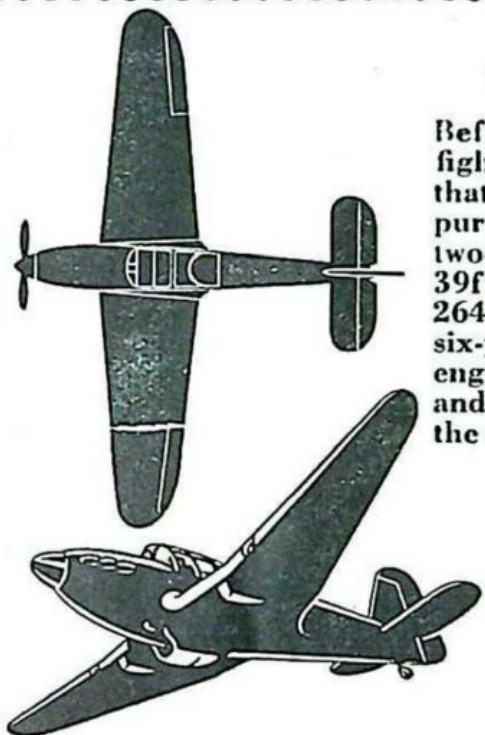
A number of the illustrations in this booklet are based on drawings specially made for Flight, the recognised weekly authority on aviation matters. Readers of this booklet seeking further technical details will find much of interest in that journal, and in the Flight identification charts of German aircraft and of British aircraft printed on card, price 1/-, or 1/6 post free.

Finally, if you ever have to use this book in real earnest, we hope that it's only to identify the bits of a Heinkel in your back garden before 'phoning for the garbage man.

# **BRITISH AIRCRAFT**

---

## *Miles "Master"*



Before a pilot can take charge of a 400 m.p.h. fighter he must be trained on a really fast machine that will carry him and his instructor. For this purpose the R.A.F. use the Miles "Master," a two-seater low-wing monoplane with a span of 39ft., a length of 30ft. 3in. and a top speed of 264 m.p.h.—nine miles an hour faster than the six-year-old "Gladiator" biplane. The "Master's" engine is a 715 h.p. Rolls-Royce Kestrel XXX, and its general appearance is not unlike that of the "Hurricane" and the "Spitfire." Chief identity features are the inverted gull-wing, large underslung radiator, and long, transparent cockpit cover.



## N. American "Harvard"



Before the war we had already bought from America a number of these machines for training purposes, in which respect they can be compared to the Miles "Master." They are powered with 550 h.p. Pratt and Whitney engines, giving them a top speed of 209 m.p.h. and a range of 810 miles. The machine's span is 43ft. and its length 27ft. 6in. A two-seater, low-wing monoplane, it is fitted with dual controls, and apart from an extremely noisy engine, can be picked out by its dumpy silhouette, the straight rudder, the large cowling of its radial engine, and the cockpit cover with its straight top and sloping ends.



## *Lockheed "Hudson"*

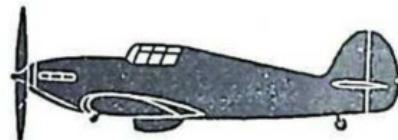
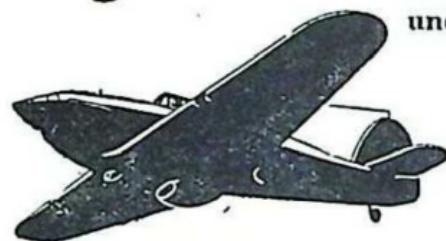


When the war started, 200 of these bomber-trainers were on order in America for the R.A.F. They are now arriving in quantities. The "Hudson" is a military version of the Lockheed "14" airliner used by British Airways. It is powered with two 900 h.p. Wright "Cyclone" engines, is of all-metal construction, has a top speed of 240 m.p.h. and a range of 2,060 miles. 65ft. 6in. in span and 44ft. 2in. long, it carries a crew of three or four. Distinctive features are the twin rudders, oval in shape, the long, rounded nose with its transparent windows, a small gun turret near the tail, and the engines slung rather low under the wings.

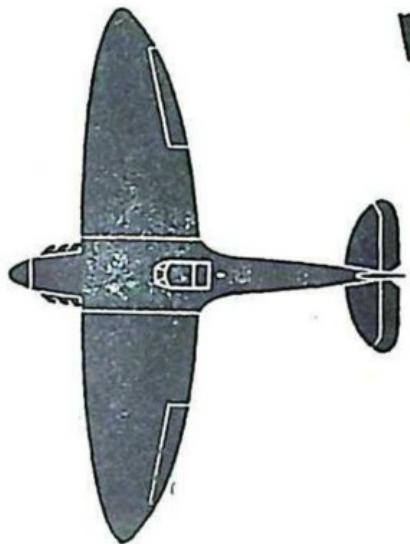
## *Hawker "Hurricane"*



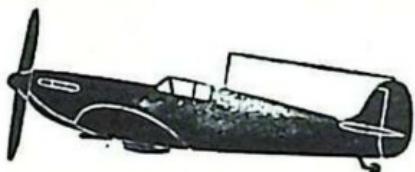
This machine has been giving an excellent account of itself in France against reconnoitring Nazi aircraft. It has a 1,030 h.p. Rolls-Royce "Merlin" engine and a top speed of about 360 m.p.h. with a range of 850 miles. In construction the fuselage is of wood, covered with fabric, and eight machine guns are housed in the wings, four each side, firing outside the airscrew disc. Its span is 40ft. and its length 31ft. 6in. Its wheels retract inwards, and in plan its leading and trailing edges are straight. A further distinguishing feature is the large radiator placed centrally on the fuselage, under the centre-section of the wing.



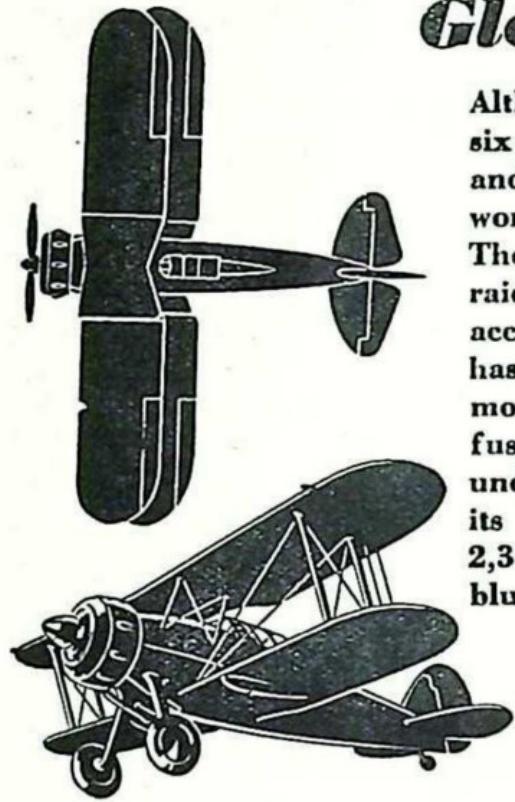
# Vickers Supermarine "Spitfire"



This all-metal fighter, our fastest, has already given a warm welcome to Nazi raiders. A 1,030 h.p. Rolls-Royce "Merlin" engine gives it an official speed of 367 m.p.h., and you can be sure it can do more than that. The "Spitfire" is of all-metal stressed-skin construction, and from its wings spit eight Browning machine guns. This little terror of the air is 36ft. 10in. in span and 29ft. 11in. long, and climbs to 11,000ft. in just under five minutes. Its rudder is smaller and more elongated than that of the "Hurricane," and its wings more pointed and with a definite curve on the trailing edge.



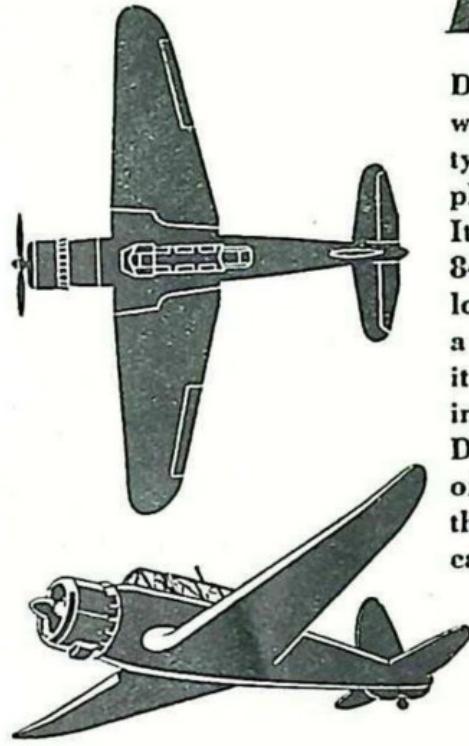
## *Gloster "Gladiator"*



Although this machine has been in service for six years or so, it has a top speed of 255 m.p.h., and its astonishing manœuvrability makes it a worthy foe for the very latest Nazi bombers. These machines took part in repelling the first raiders on the Firth of Forth, and may have accounted for some of them. The "Gladiator" has an 830 h.p. Bristol "Mercury" engine and mounts six machine guns—two on the sides of the fuselage, firing through the airscrew, and two under the lower wings. Its span is 32ft. 3in. and its length 27ft. 5in. It climbs at the rate of 2,300 ft. a minute. Distinctive features are the blunt wing-tips and the single-pillar undercarriage.



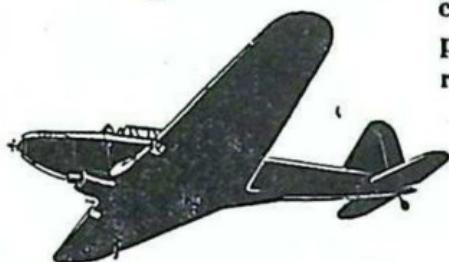
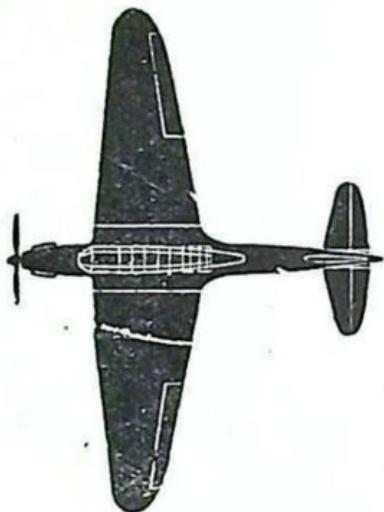
## ***Blackburn "Skua"***



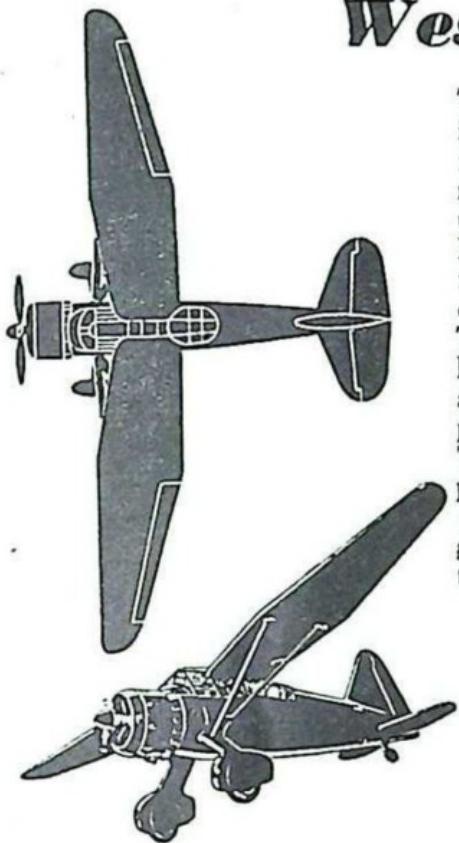
Dive-bombing has been playing a great part in the war against U-Boats. Foremost among British types is the Blackburn "Skua" low-wing monoplane, which is widely used in the Fleet Air Arm. It is powered with a Bristol "Mercury" engine of 840 h.p. and is 46ft. 2in. in span and 35ft. 7in. long. It has a top speed of 225 m.p.h. and carries a crew of two. When used as a two-seater fighter it has two machine guns in the wings and a third in the rear cockpit. Construction is all metal. Distinguishing features are the rudder set forward of the end of the fuselage (to give clearance for the wings which fold for stowage in the aircraft carrier) and the prominent cockpit cover.

## *Fairey "Battle"*

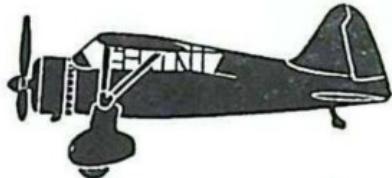
Officially classified as a medium bomber, this machine is being used in large numbers on the Western front for reconnaissance over the Siegfried Line. Powered with a 1,030 h.p. Rolls-Royce "Merlin" engine, it has a range of 1,200 miles and a maximum speed of 257 m.p.h. It carries a crew of three and is armed with two machine guns—one in the starboard wing and one in the aft cockpit. Its span is 54ft. and its length 42ft. 2in. It is of all-metal construction, and in shape is slightly similar to the "Hurricane," though it is considerably bigger than this machine. It can be distinguished by the length of the transparent cockpit cover, by the straight back of the rudder and the slimmer lines of the fuselage.



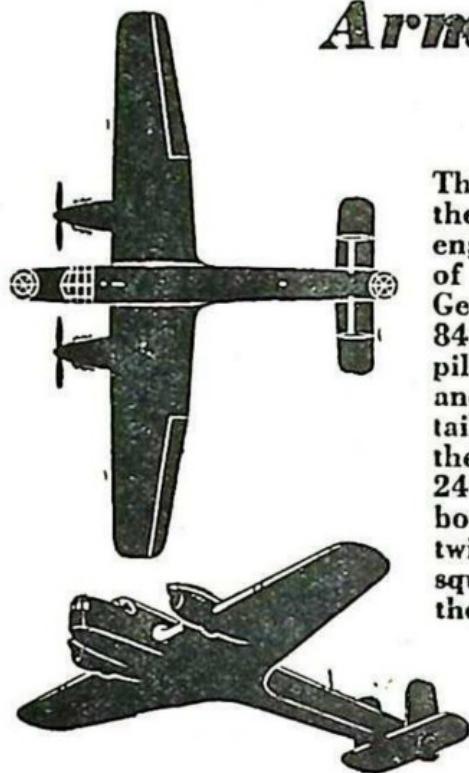
## *Westland "Lysander"*



This slightly odd-looking, seagull-like machine is, in fact, astonishingly manœuvrable and perfect for its job—army co-operation. It has, too, a remarkably wide range of speed, from 55 m.p.h. up to 230 m.p.h. It is powered by an 830 h.p. Bristol "Mercury" engine and has a range of 600 miles. The undercarriage is non-retracting and can be fitted with stub wings to carry light bombs. The spats over the wheels each carry a landing lamp and one conceals a machine gun. There is another on a movable mounting in the rear cockpit. Its span is 50ft. and its length 30ft. 6in. The "Lysander" is an easy one to spot in the air, particularly because of its high wing and struts (so placed to give the best possible view of the ground) and its stumpy rudder. This machine, too, is no stranger to the Siegfried Line.



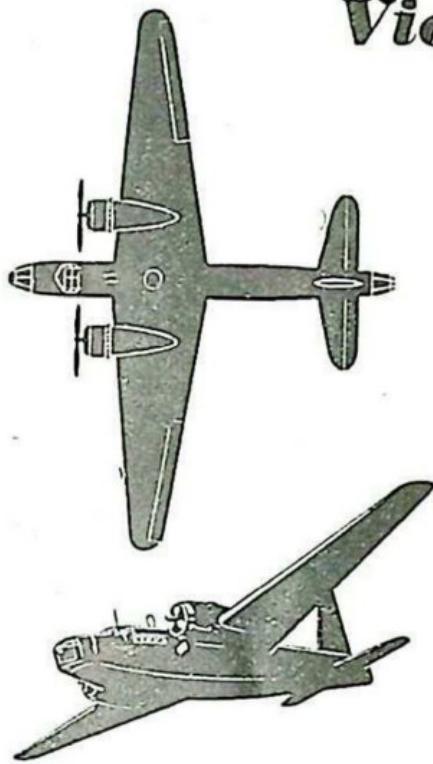
# *Armstrong-Whitworth ee Whitley '99*



This is our heaviest bomber. The latest version, the Mark IV, fitted with two Rolls-Royce "Merlin" engines of 1,030 h.p. each, has been doing most of the leaflet-dropping reconnaissance raids over Germany. 69ft. 3in. long, and with a span of 84ft., this all-metal giant carries a crew of five—pilot, navigator and bomb-aimer, radio operator and two gunners. Guns are in turrets in nose and tail, and in a retractable cupola in the floor of the fuselage. The "Whitley" has a top speed of 245 m.p.h., a range of 1,250 miles and carries a bomb load of 3,443lb. Distinctive features are the twin rudders and low tail-plane, the aft gun turret, square-sectioned fuselage and square-tipped wings, the ends of which are turned up slightly.



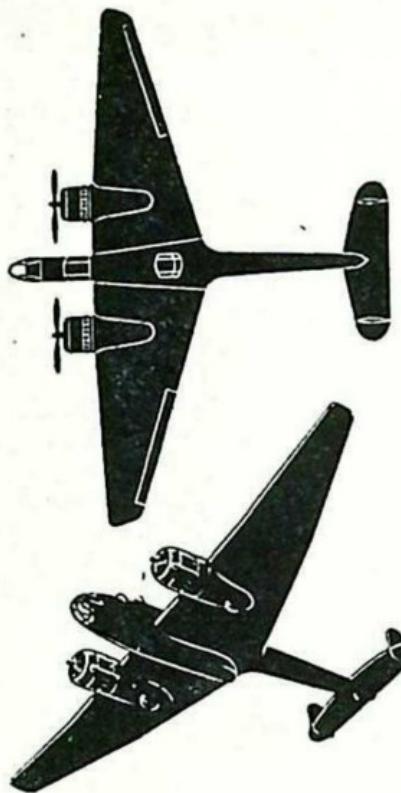
## *Vickers "Wellington"*



This is probably the world's most formidable heavy bomber. Built on an entirely new principle of geodetic construction — a network of curved duralumin girders, fabric covered, it carries a mighty bomb load over a range of 3,200 miles and has a top speed of 270 m.p.h.—a performance made possible by this construction. It is powered with two Bristol "Pegasus" engines of 1,000 h.p. each and has a span of 86ft. 1in. and a length of 61ft. 3in. The crew numbers five and the machine carries four machine guns—a pair in the nose and a pair in the tail. Main identification points are the tall, narrow rudder with the gun turret behind it, and the straight-edged, tapered wings. Other editions are the Mark II with 1,375 h.p. Bristol "Hercules" engines and the Mark III with Rolls-Royce "Merlins" of 1,030 h.p.



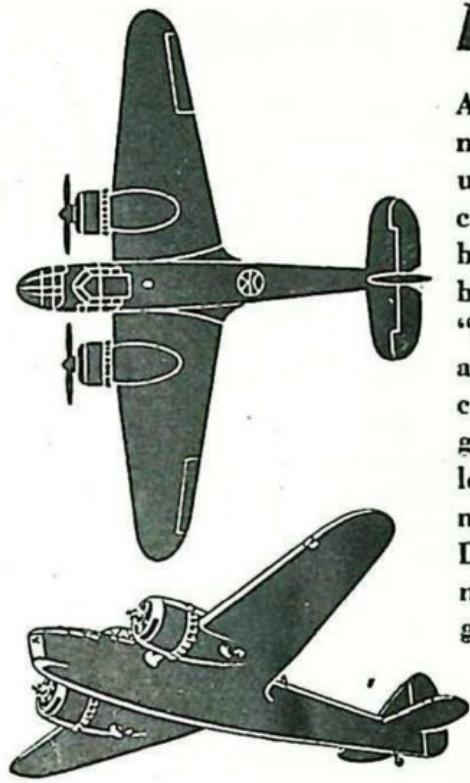
# *Handley Page* “*Hampden*”



Latest in the long line of Handley Page machines (remember their famous O/400 bombers in the last war?), the “Hampden” bomber is a worthy descendant—fast, uncommonly well armed and very manoeuvrable. Powered with two 1,000 h.p. Bristol “Pegasus” engines, it has a top speed of 265 m.p.h. and a range of 2,000 miles—a long range for a machine of its type and load. Of all-metal construction, it carries four guns—one in the nose, one on top of the fuselage firing forward, one on top of the fuselage firing aft, and one in the “dustbin” under the fuselage also firing aft. The crew numbers four. Span is 69ft. 2in. and length 53ft. 7in. The “Hampden’s” long, narrow, boom-like fuselage, its comparatively lumpy forward section and its sharply tapering wings are distinctive features.



## **Bristol "Blenheim"**

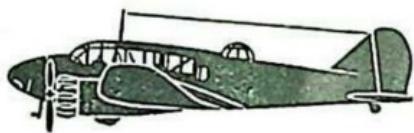
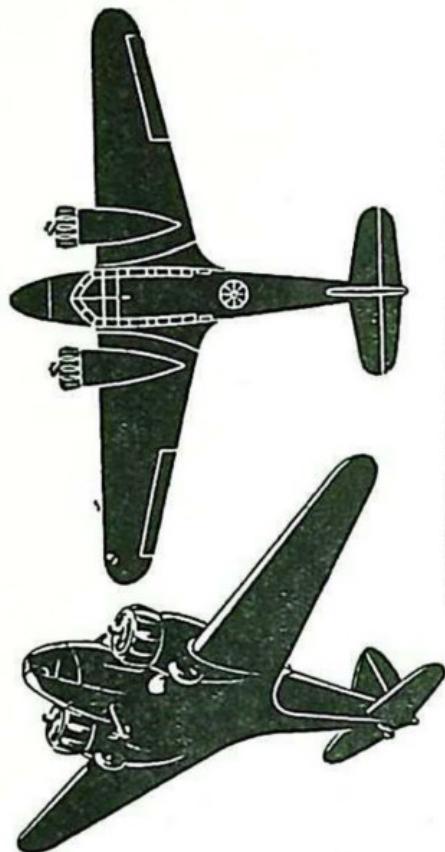


Although designed as a fast light bomber, this mid-wing, all-metal monoplane has also been used as a long-range fighter. In the former capacity it took part in the first raid on Brunsbuttel, and in the latter it shot-up the flying-boat base at Borkum. It has two 920 h.p. Bristol "Mercury" engines, a range of nearly 2,000 miles and a top speed of 295 m.p.h. The "Blenheim" carries a crew of three and mounts two machine guns as a bomber. Its span is 56ft. 4in. and its length 42ft. 9in. There is also an earlier, slower model with a shorter nose than that illustrated. Distinctive features are the slightly pointed wings making a distinct angle with the fuselage, and the gun turret on top of the fuselage.

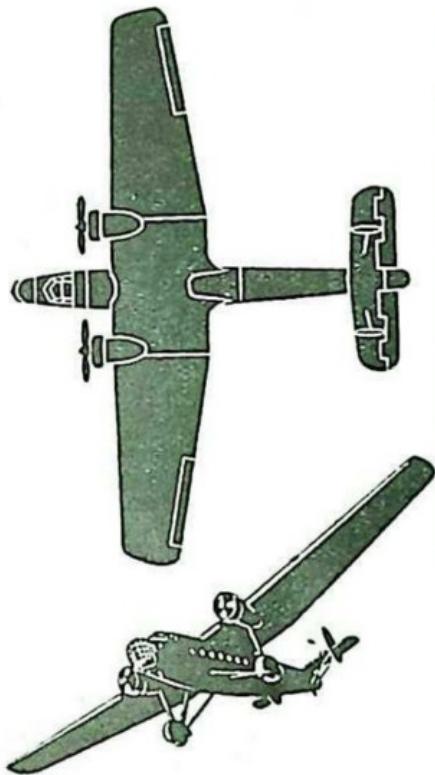


## *Aero "Anson"*

This is a machine that U-Boat commanders don't like, for its recent work on Coastal Patrol has given it a reputation as a submarine-getter. Officially a coastal reconnaissance 'plane, it has been widely used for training. For war purposes its crew of four handle four machine guns—mounted in the wings and in a turret on the fuselage. A bomb load of 360lb. can be carried as well. The "Anson's" engines are Armstrong-Siddeley "Cheetahs" of 350 h.p. each, and it has a top speed of 188 m.p.h. and a range of 940 miles. Its length is 42ft. 3in. and its span 56ft. 6in. Somewhat similar to the "Blenheim," its nose is sharper, its rudder less pointed, and the transparent "greenhouse" cannot be mistaken when the 'plane is viewed from the side.



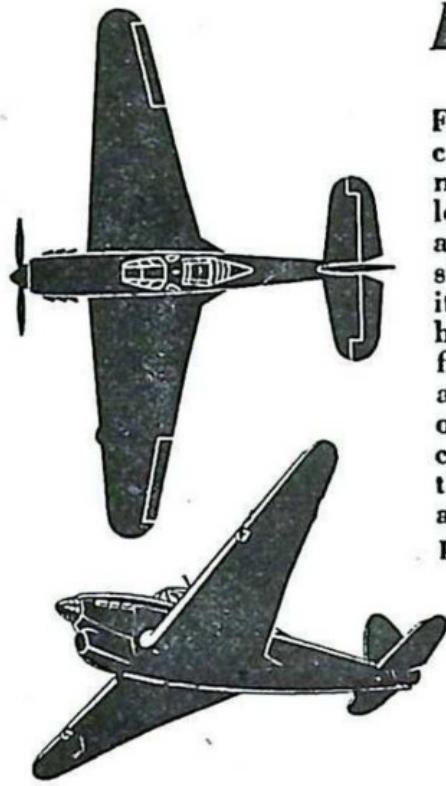
## *Bristol "Bombay"*



In this war swift transport of men, and perhaps even more vital, supplies and spare parts, is going to be important. The "Bombay" bomber-transport, a giant 95ft. 9in. in span and 69ft. 3in. long, can carry twenty-four armed troops or an equivalent weight (over 7,000lb.) of bombs or supplies over a range up to 2,000 miles, according to load. Its twin engines are 1,010 h.p. Bristol "Pegasus" and its top speed is 192 m.p.h. Its actual crew numbers three, with a fourth when used as a bomber. It carries two machine guns—in the nose and in the tail. It is of all-metal construction and is recognisable by its non-retracting undercarriage, its high wing and struts, with swept-forward trailing edge, and its twin rudders situated about halfway along the tail-plane.

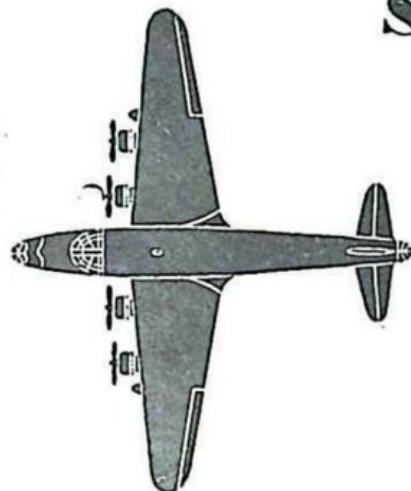


# Hawker "Henley"

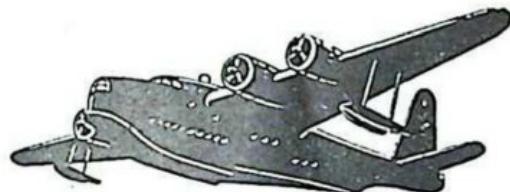


From the makers of the famous "Hurricane" comes the "Henley" day bomber. This compact mid-wing craft, 47ft. 10in. in span and 36ft. 5in. long, has a top speed of 272 m.p.h. and carries a crew of two. Although it can put up a good show as a dive-bomber or reconnaissance machine, it has been widely used to tow targets for the benefit of the men who are training to fly our fighters, and it tows them faster than any other aeroplane. Its engine is a Rolls-Royce "Merlin II" of 1,030 h.p., the same as the "Hurricane." It can be identified by the radiator directly under the engine, giving it a chunky, slightly curved appearance from the side. Its transparent cockpit cover is also rather curved.

## *Short "Sunderland"*



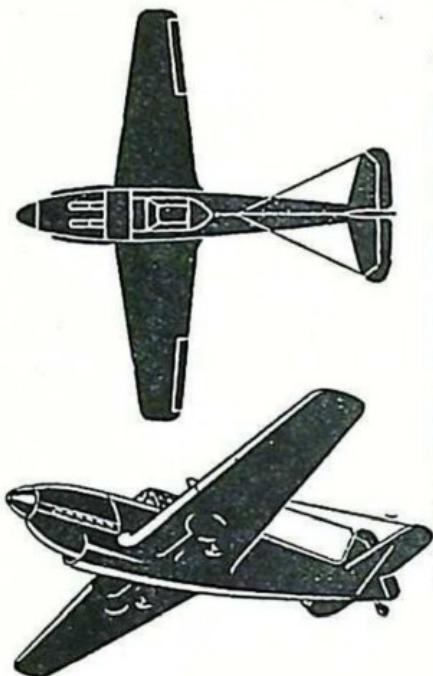
This flying boat is used for long-range reconnaissance and bombing. It is powered with four 1,000 h.p. Bristol "Pegasus" engines, and has a range of from 1,670 to 2,800 miles and a top speed of 210 m.p.h. Of all-metal construction, it carries a crew of six or eight. Its span is 112ft. 9in. and its length 85ft. 4in. Early in the war a couple of "Sunderlands" rescued and took to shore 34 members of the crew of a torpedoed steamer. It is armed with machine guns in turrets in nose and tail, and is generally similar to the famous Transatlantic flying boats. Its main features, apart from its four engines, are its gun turrets and the tall, narrow rudder.



# **GERMAN AIRCRAFT**

---

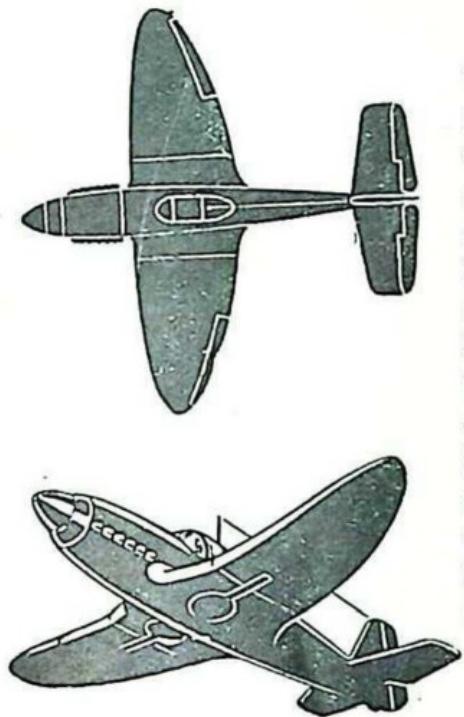
## *Messerschmitt 109*



This fighter is one of the Luftwaffe's most publicised machines and was the standard fighter of the German Condor Legion in the Spanish War. It may be compared with our "Hurricane," for its top speed is 354 m.p.h. and its appearance somewhat similar. Armament consists of two machine guns on either side of the fuselage, firing through the airscrew, and two shell guns in the wings, while an earlier combination was made up of four machine guns in the wings and a shell gun firing through the airscrew hub. Its motor is a Daimler-Benz of 1,050 h.p. and it has a range of 621 miles. Its length is 32ft. and its span 32ft. 6in. Its square wing tips are conspicuous, and the radiator below the nose is a noticeable feature.



## *Heinkel 112*



The Heinkel 112 is a more recent fighter than the Messerschmitt 109 and may be compared with the British "Spitfire." It has a top speed of 358 m.p.h. and is powered by the same engine as the Messerschmitt — a 1,050 Daimler-Benz. Like its companion, it carries two machine guns on the fuselage and two shell guns in the wings. Its span is 30ft. 2in. and its length 29ft. 7in. With special tanks, it is supposed to have a range of 1,555 miles, but normally the range is about half this figure. Aerodynamically, its shape is excellent, and it can be distinguished by its pointed wings, with curved leading and trailing edges, and by its large tail-plane. The fuselage is slightly fatter than that of the Messerschmitt.

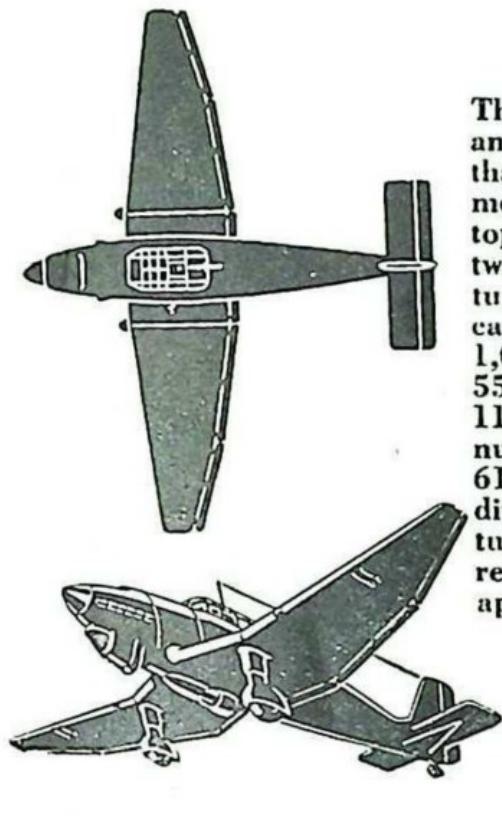


## *Messerschmitt 110*

Not much is yet known about this twin-engined fighter. It is reputed to have a top speed of about 380 m.p.h. and a range of 1,000 miles or so, which would enable it to escort bombers raiding Britain; but as it was only undergoing its service tests early in 1939, it is doubtful if it is available in any quantities. Its engines are Daimler-Benz 601's of 1,100 h.p., and it carries a crew of two, two cannons and four machine guns. Its span will probably be about 40ft. and its length about 35ft.



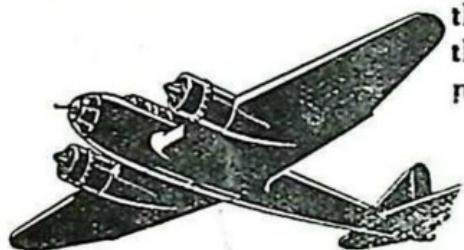
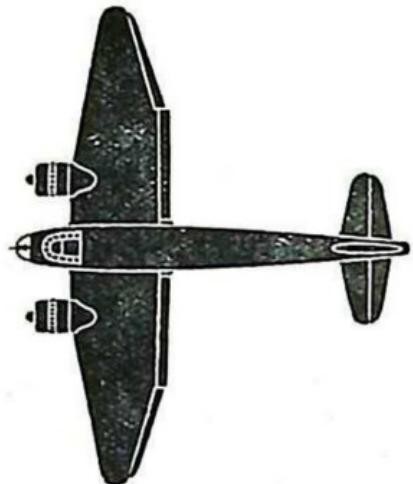
## Junkers 87K



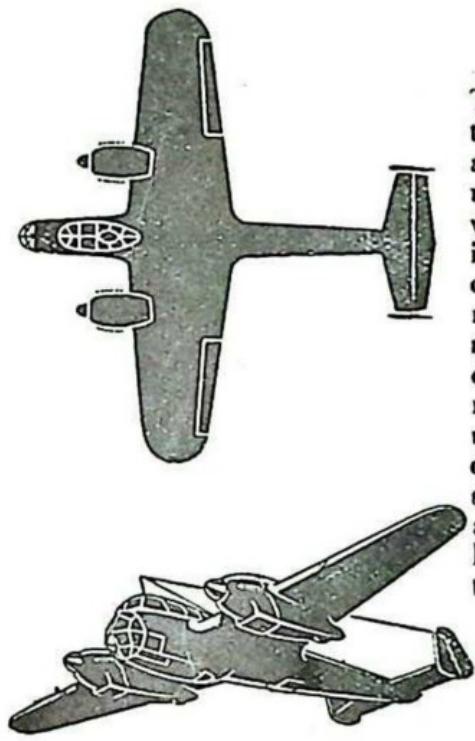
This dive-bomber has already seen service in Spain and Poland, and is supposed to be of the type that didn't sink the Ark Royal. It has a Jumo motor of 1,000 h.p. in the latest models, and a top speed of 240 m.p.h. It carries three guns—two in the wings and a third firing aft from a turret on the fuselage. A bomb load of 1,000lb. can be carried, either in the form of a single 1,000lb. bomb slung beneath the fuselage, or a 550lb. bomb carried in the same place and four 110lb. bombs fitted under the wings. The crew numbers two, and the machine has a range of 610 miles. Wings are fitted with air-brakes for dive-bombing, and the main distinguishing features are the inverted gull-wing, the spatted, non-retracting undercarriage, and the hump-back appearance of the cockpit cover.

## Junkers 88

This is a comparatively small fast bomber and reconnaissance machine (similar to our "Blenheim"). It is powered with two 1,100 h.p. Jumo motors and carries a crew of three, and three machine guns. A more recent model, the Ju. 88K, is supposed to have a top speed of about 300 m.p.h. and a range of 1,300 miles; so the performance of the Ju. 88 is almost certainly quite a bit lower. Distinctive features are the short nose—shorter than is usual on German aircraft of this type, the way the engine nacelles hang below the wing, and the straight lines of the fuselage when seen from the side. The break in the trailing edge towards the wing tips is also distinctive, and the fuselage projects slightly beyond the rudder.



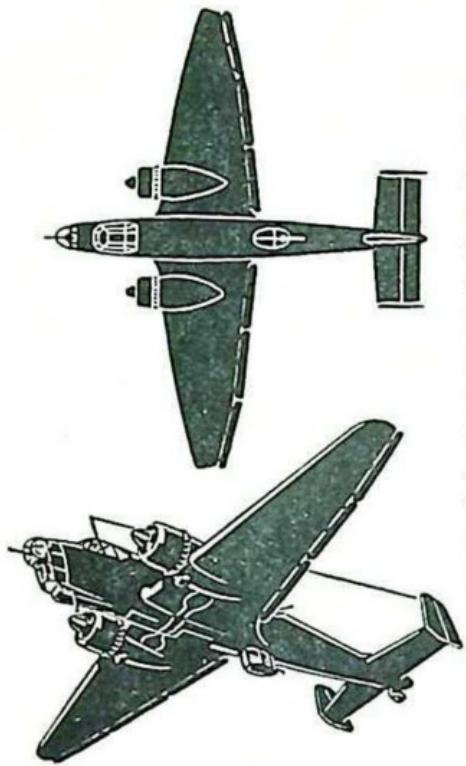
## Dornier 215



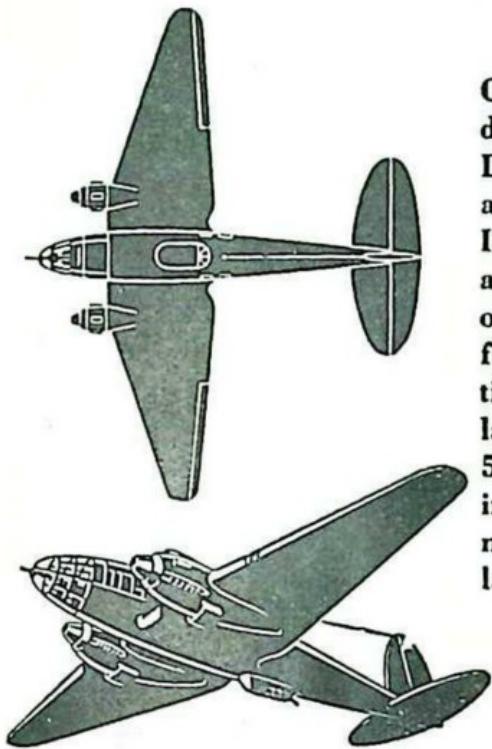
This is one of the latest Nazi bombers, known as the "Flying Pencil," from its slim profile. It has a top speed of 292 m.p.h. and a range of 1,490 miles. Latest models have 1,100 h.p. inverted vee twelve-cylinder Daimler-Benz engines. Span is 59ft. 3in. and length 55ft. 5in. A bomb load of 1,500lb. is carried inside the fuselage. The machine carries three guns, one in a turret underneath, and is operated by a crew of three. An earlier version, the Do. 17, has a speed of 260 m.p.h. and a prominent top turret, but is "blind" underneath, as some of our fighter pilots have discovered. Chief features are the twin rudders, semi-circular wing tips, slender rear fuselage, and a comparatively bulky nose. It is about the same length as our "Hampden," but the span is nearer that of the "Blenheim."

## Junkers 86K

This is another of Germany's heavy bombers. It is powered with two 880 h.p. B.M.W. radial engines, has a cruising speed of 214 m.p.h. with a 2,205lb. load of bombs, and a range of 935 miles. Its armament is three guns—in the nose and above and below the fuselage. The irregularly tapered wings and the very prominent trailing flaps, between which and the wings daylight can often be seen, and the twin rudders, are prominent features. Span is 73ft. 7in. and length 58ft. 8in. A similar model with 700 h.p. Junkers Jumo heavy oil engines with a top speed of 224 m.p.h. can be recognised by the deep thumping beat of its motors.



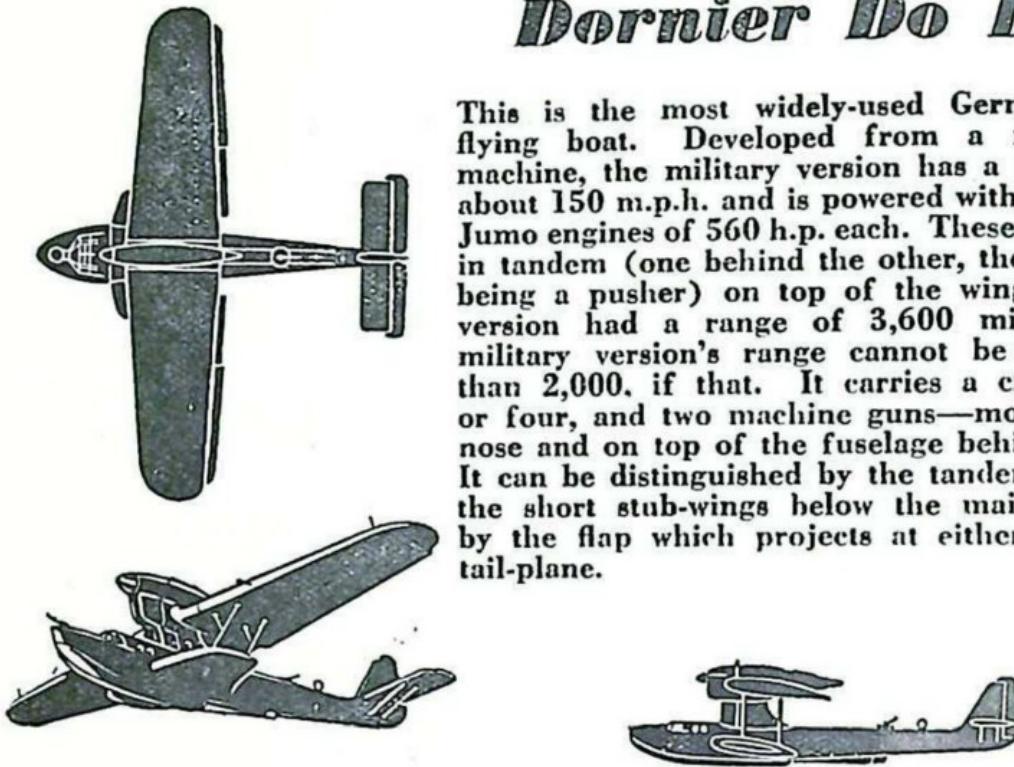
## *Heinkel 111K*



One of these bombers was the first to be brought down on British soil. A bigger machine than the Dornier 215, it is comparable to our "Wellington," and has a top speed of 265 m.p.h.—nearly as fast. It is powered by two 1,100 Daimler-Benz motors and has a range of 2,170 miles. It carries a crew of four and is armed with three guns. Chief features are the finely streamlined fuselage, elliptical wings and tail-plane, transparent nose and large single rudder. Span 73ft. 10in., length 57ft. 5in. There have been several minor changes in the design of the Heinkel 111K, chiefly on the nose. It is also believed that the wings of the latest version have a straighter leading edge.

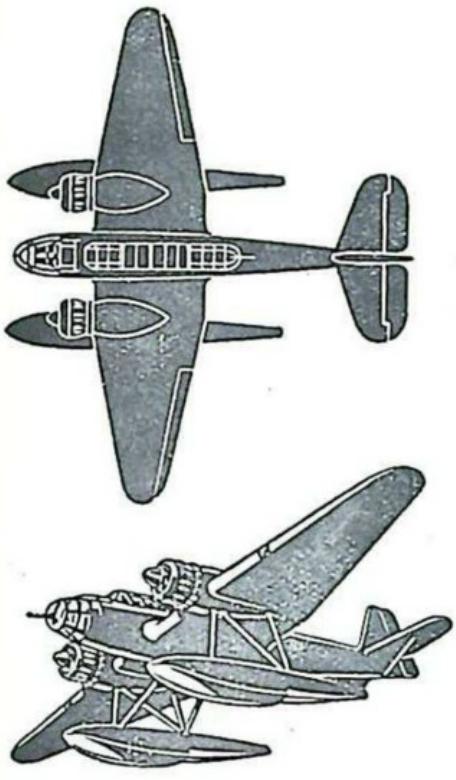


## Dornier Do 18K

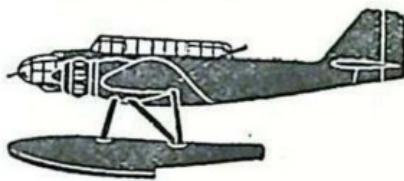


This is the most widely-used German military flying boat. Developed from a famous civil machine, the military version has a top speed of about 150 m.p.h. and is powered with two Junkers Jumo engines of 560 h.p. each. These are mounted in tandem (one behind the other, the rear engine being a pusher) on top of the wing. The civil version had a range of 3,600 miles, but the military version's range cannot be much more than 2,000, if that. It carries a crew of three or four, and two machine guns—mounted in the nose and on top of the fuselage behind the wing. It can be distinguished by the tandem engine, by the short stub-wings below the main-plane, and by the flap which projects at either end of the tail-plane.

## *Heinkel HE 115*



It is this seaplane which is suspected of laying mines in the mouth of the Thames and round our coasts recently. In peace time this machine set up several speed records for distance with load. 72ft. in span, it has a top speed of 215 m.p.h., is powered with two B.M.W. radial engines, and has a range of 1,300 miles. It carries a crew of four, and is armed with two machine guns—in the nose and aft of the cockpit cover. It can carry bombs or a torpedo when not engaged in mine-laying, and is of all-metal construction. Prominent features are the rounded nose, similar to that of the Heinkel 111 bomber, the tapered wings and the square-cut rudder.



# Index

	Page		Page
Anson	18	Hurricane	8
Battle	12	Junkers 86K	28
Blenheim	17	Junkers 87K	25
Bombay	19	Junkers 88	26
Dornier 215	27	Lysander	13
Dornier 18K	30	Master	5
Gladiator	10	Messerschmitt 109	22
Hampden	16	Messerschmitt 110	24
Harvard	6	Skua	11
Heinkel 111K	29	Spitfire	9
Heinkel 112	23	Sunderland	21
Heinkel 115	31	Wellington	15
Henley	20	Whitley	14
Hudson	7		



1

300

xii

六

6

1

xii

六

10<sup>k</sup> 41-5

3 2  
3 5  
3 3

180